

AMENDMENTS TO THE CLAIMS:

This listing of the claims will replace all prior versions, and listings, of the claims in this application:

The Claims:

1. **(Currently Amended)** A method, comprising:

~~transmitting and receiving a signaling messages message~~ in a functional entity for subscriber mobility management in a mobile communication system;

~~receiving a trace command in-said functional entity, the trace command identifying at least one subscriber whose signaling messages are to be traced and indicating identifying a tracer to which information obtained during tracing is sent; and~~

~~in response to determining that the signaling message is related to the at least one subscriber, starting tracing in the functional entity, wherein said tracing comprises sending, from the functional entity to the tracer, a copy of a the signaling message, related to the subscriber to be traced in response to receiving or transmitting the signaling message in the functional entity, wherein the copy of the signaling message sent to the tracer is identical to the received signaling message of the subscriber.~~

2. **(Currently Amended)** [[A]] The method according to claim 1, wherein the trace command also indicates the type of the signaling ~~message messages~~ to be traced, and the method further comprises:

determining whether the signaling message is of the type to be traced, where the copy of the signaling message is sent only if the signaling message is of the type to be traced.

3. **(Currently Amended)** [[A]] The method according to claim 1, ~~wherein tracing starts from the further comprising:~~

receiving a start message of a dialogue;

in response to receiving the start message, determining whether the dialogue is related to the subscriber to be traced; and

in response to determining that the dialogue is related to the subscriber to be traced, adding the dialogue to a list of traced dialogues,

where determining that the signaling message is related to the at least one subscriber comprises: determining whether the signaling message belongs to a traced dialogue on the list of traced dialogues.

4. (Currently Amended) [[A]] The method according to claim 3, wherein tracing of the subscriber's signaling message stops in response to the fact that the dialogue which started tracing ends further comprising:

in response to determining that the signaling message belongs to the traced dialogue, determining whether the signaling message stops the traced dialogue; and

in response to determining that the signaling message stops the traced dialogue, removing the traced dialogue from the list of traced dialogues.

5. (Currently Amended) [[A]] The method according to claim 1, further comprising:
receiving a stop command of tracing in the entity, the stop command indicating the subscriber whose signaling message tracing is to be stopped, and
stopping tracing of the signaling messages related to said subscriber.

6. (Currently Amended) [[A]] The method according to claim 1, wherein the signaling messages of the MAP protocol are traced.

7-20. (Canceled).

21. (New) An apparatus, comprising at least one processor; and at least one memory including computer program code, the at least one memory and the computer program code configured to, with the at least one processor, cause the apparatus to perform at least the following:

to receive a trace command, the trace command identifying at least one subscriber whose signaling messages are to be traced and identifying a tracer to which information obtained during tracing is sent;

to receive a signaling message; and

in response to determining that the signaling message is related to the at least one subscriber, to send, from the functional entity to the tracer, a copy of the signaling message, wherein the copy of the signaling message sent to the tracer is identical to the received signaling message.

22. (New) The apparatus according to claim 21, wherein the trace command also indicates the type of signaling messages to be traced, and the at least one memory and the computer program code are further configured to cause the apparatus to perform at least the following:

to determining whether the signaling message is of the type to be traced, where the copy of the signaling message is sent only if the signaling message is of the type to be traced.

23. (New) The apparatus according to claim 21, where the at least one memory and the computer program code are further configured to cause the apparatus to perform at least the following:

to receive a start message of a dialogue;

in response to receiving the start message, to determine whether the dialogue is related to the subscriber to be traced; and

in response to determining that the dialogue is related to the subscriber to be traced, to add the dialogue to a list of traced dialogues,

where, when determining that the signaling message is related to the at least one subscriber, the at least one memory and the computer program code are further configured to cause the apparatus to determine whether the signaling message belongs to a traced dialogue on the list of traced dialogues.

24. (New) The apparatus according to claim 23, where the at least one memory and the computer program code are further configured to cause the apparatus to perform at least the following:

in response to determining that the signaling message belongs to the traced dialogue, to determine whether the signaling message stops the traced dialogue; and

in response to determining that the signaling message stops the traced dialogue, to remove the traced dialogue from the list of traced dialogues.

25. (New) The apparatus according to claim 21, where the at least one memory and the computer program code are further configured to cause the apparatus to perform at least the following:

to receive a stop command of tracing in the entity, the stop command indicating the subscriber whose signaling message tracing is to be stopped, and
to stop tracing of the signaling messages related to said subscriber.

26. (New) The apparatus according to claim 21, wherein the signaling messages of the MAP protocol are traced.

27. (New) A computer readable medium tangibly encoded with a computer program executable by a processor to perform actions comprising:

receiving a trace command, the trace command identifying at least one subscriber whose signaling messages are to be traced and identifying a tracer to which information obtained during tracing is sent;

receiving a signaling message; and

in response to determining that the signaling message is related to the at least one subscriber, sending, from the functional entity to the tracer, a copy of the signaling message, wherein the copy of the signaling message sent to the tracer is identical to the received signaling message.

28. (New) The computer readable medium according to claim 27, wherein the trace command also indicates the type of signaling messages to be traced, and the actions further comprise:

determining whether the signaling message is of the type to be traced, where the copy of the signaling message is sent only if the signaling message is of the type to be traced.

29. (New) The computer readable medium according to claim 27, wherein the actions further comprise:

receiving a start message of a dialogue;

in response to receiving the start message, determining whether the dialogue is related to the subscriber to be traced; and

in response to determining that the dialogue is related to the subscriber to be traced, adding the dialogue to a list of traced dialogues,

where determining that the signaling message is related to the at least one subscriber comprises: determining whether the signaling message belongs to a traced dialogue on the list of traced dialogues.

30. (New) The computer readable medium according to claim 29, wherein the actions further comprise:

in response to determining that the signaling message belongs to the traced dialogue, determining whether the signaling message stops the traced dialogue; and

in response to determining that the signaling message stops the traced dialogue, removing the traced dialogue from the list of traced dialogues.

31. (New) The computer readable medium according to claim 27, wherein the actions further comprise:

receiving a stop command of tracing in the entity, the stop command indicating the subscriber whose signaling message tracing is to be stopped, and

stopping tracing of the signaling messages related to said subscriber.

32. (New) The computer readable medium according to claim 27, wherein the signaling messages of the MAP protocol are traced.

33. (New) An apparatus, comprising:

means for receiving a trace command, the trace command identifying at least one subscriber whose signaling messages are to be traced and identifying a tracer to which information obtained during tracing is sent;

means for receiving a signaling message in a functional entity for subscriber mobility management in a mobile communication system;

means for sending, from the functional entity to the tracer, a copy of the signaling message in response to determining that the signaling message is related to the at least one subscriber, wherein the copy of the signaling message sent to the tracer is identical to the received signaling message.

34. (New) The apparatus according to claim 33, further comprising:

means for receiving a start message of a dialogue;

means for determining whether the dialogue is related to the subscriber to be traced in response to receiving the start message;

means for adding the dialogue to a list of traced dialogues in response to determining that the dialogue is related to the subscriber to be traced; and

means for determining that the signaling message is related to the at least one subscriber, which comprise: means for determining whether the signaling message belongs to a traced dialogue on the list of traced dialogues.